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Tax Evasion and Missing Imports: Evidence from Transaction-Level Data

Summary of ICTD Working Paper 101 by Andualem T. Mengistu, Kiflu G. Molla and Giulia Mascagni

Tax evasion is typically very hard, if not impossible, to measure. In the case of trade flows however, it is possible to capture it thanks to "missing imports": the difference between the total value of exports recorded by country A to country B and the total value of imports of country B from country A. While there is no economic reason why these two values should differ,[1] there are incentives for misreporting particularly on the importing side since imports are often heavily taxed – unlike exports. Ethiopia is a typical case in this respect, as it taxes imports very heavily, with some products facing tax rates as high as 240 per cent. Against this background, this paper investigates how much tax evasion, captured by missing imports, responds to variations in the tax rate. The theory postulates that this relation is ambiguous, as higher rates increase both the benefit from evasion and the penalties if caught. Through the lens of missing imports, we aim to investigate this relationship empirically in Ethiopia.

Data and methods

We use both data from the United Nations' database of trade flows (COMTRADE) and a rich set of administrative data obtained from the Ethiopian Revenue and Customs Authority (ERCA). Data from both sources is highly disaggregated at the product level, and the administrative data is further disaggregated at the transaction level. Our main measure of missing imports, as a proxy for trade tax evasion, is derived from COMTRADE. However, the administrative data is crucial to produce two measures that allow for a more precise analysis than many other studies in the literature: effective tax rates (ETR) and trade costs. The former represents how much importers actually pay in total tax on their imports – as opposed to the statutory rate that, as we show, is about 10 percentage points higher than the ETR. Importantly, it is the latter that determines taxpayers' incentives to evade since it represents the actual amount of tax due, considering exemptions, which are increasing in recent years. Secondly, our administrative

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[1] However, we discuss in more detail why these two measures might differ, what are the implications for the analysis, and how we can separate evasion from other factors.

data allows us to calculate trade costs. We use this measure to calculate missing imports more precisely, therefore reducing the possibility of bias in our results.

Evasion response to statutory and effective tax rates

First, we show that evasion in Ethiopia responds particularly to effective tax rates, rather than statutory ones. This result is fully in line with the prevalence of exemptions in the country, which makes it particularly important to take the effective tax burden into account when assessing firms' behaviour. Our results show that a percentage point increase in the effective tax rate is associated with a 1 percent increase in the evasion gap (more precisely, 1.14 to 1.16 percent depending on the specification). This coefficient is both economically large and statistically significant. An immediate policy implication of this result relates to policymakers' usual concern that decreasing tariffs would lead to reduced revenue. This is indeed a concern in Ethiopia, as the country is preparing to join the WTO and still has a relatively low tax to GDP ratio. Our results, however, show that the negative impact of reducing trade taxes would, at least in part, be compensated by lower evasion – which, in turn, means a wider tax base.

Considering confounding factors

Our analysis considers a number of confounding factors that may bias the main results, which stem both from the literature and from the Ethiopian context. In particular, we check three factors. First, we separate homogeneous and differentiated products to check if evasion in the latter is more elastic to changes in the tax rate, as shown in parts of the literature. Although our results point to the same direction as most other studies, we show that such differentiation does not matter much in the Ethiopian case. This is consistent with the customs valuation system applied in Ethiopia, which we discuss in the paper. Second, we consider the role of foreign currency rationing, which is an issue specific to the Ethiopian context. Since rationing is potentially related to both the level of trade gap and the tax rate, ignoring it may bias our results. While we show that rationing itself has a significant relation with the trade gap (missing imports), it does not seem to affect its relationship with the tax rate. Third, we use our unique transaction-level data to calculate trade costs and correct the missing trade measure accordingly. We find that failing to take trade costs into account, or not capturing them properly, leads to a downward bias in the estimation of the relation between evasion and tax rates. Once they are accounted for properly, that relation becomes stronger and remains highly significant.

Investigating the mechanisms of trade tax evasion

There are three main mechanisms through which trade tax evasion occurs: under-invoicing (lower price), under-reporting of import quantities, and misclassification of products to lower-taxed ones. We show that in the case of Ethiopia evasion seems to occur mostly through misreporting quantities. The lack of evidence for under-invoicing is consistent with the customs valuation system applied in the country, which make this mechanism less feasible in this case.

Further reading

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Credits

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